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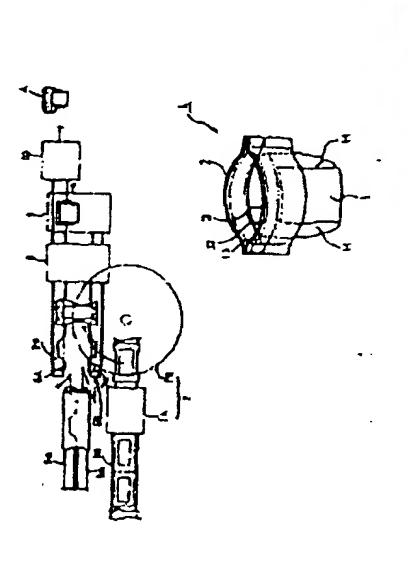
(54) MANUFACTURE OF BRIEFS TYPE DISPOSABLE DIAPER

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(57) Abstract:

PURPOSE: To reduce costs by enabling an automatic large-scale production method by forming a back body wrapping part and front body wrapping sections to place a diaper main body thereon orthogonally and to bond it thereto.

CONSTITUTION: Optional stock is selected for a back body wrapping section and front body wrapping sections (2 and 3) independently of diaper body 1. In other words, the diaper body 1 is relayed to a turning transfer device 7A behind a suction conveying device 7A and the diaper body 1 is turned by 90 to be supplied to a specified position between belt bodies 2a and 3a of both body wrapping sections perpendicular thereto. Then the diaper body is conveyed to a bonding means 8 to bond it integrally with the belt bodies 2a and 3a of both body wrapping sections. Thereafter, the assembly is conveyed to a folding means 9 to be folded double and side ends of the belt bodies 2a and 2b of both the body wrapping sections are cut while being bonded by a bonding/ cutting means 10.



full translation attached
No equiv. outside Japan

Translation of

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Number of claims 1

(total of 6 pages (in the Japanese))

Title of the invention Brief-type disposable diaper production
method

Patent application number H1-315742

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Specification

1. Title of the invention

Brief-type disposable diaper production method

2. Scope of the patent claim

A brief-type disposable diaper production method involving

a process whereby a water-absorbent material is inserted between an outer sheet and an inner sheet to form a diaper body; a process whereby a front waistband and a continuous back waistband having an elastic member at least at the side is formed;

a process whereby the diaper body is overlapped and adhered to both waistbands in the transverse direction;

a process whereby the diaper body is folded double and both waistbands are brought into contact; and

a process whereby the contacted waistbands are cut to prescribed dimensions and the regions near the cuts are adhered to integrate the waist parts at the edge portions

to produce a brief-type disposable diaper from a diaper body and a single waistband.

3. Detailed description of the invention

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Field of industrial use

The present invention relates to a brief-type disposable diaper production method.

Prior art

Known technology relating to this type of brief-type disposable diaper production method is disclosed in Japanese Unexamined Patent Application Number S57-77304: "Diaper-brief and Production Method Therefor".

Problems to be overcome by the invention

The abovementioned technology is disadvantageous in that as there is a cut-out portion in order to form an opening for the wearer to insert his/her legs, it is necessary to add a process for forming the cut-out portion, which raises production costs.

Means of overcoming the abovementioned problem

The present invention overcomes the abovementioned problem of the prior art and allows the production of brief-type disposable diapers by an automated large-scale production method involving a process whereby a diaper body is formed; a process whereby a back waist part and front waist part are formed; a process whereby the diaper body is overlapped and adhered to both waist parts in the transverse direction; and a process whereby the diaper body is adhered and integrated.

Embodiment

The present invention is described in detail based on the embodiment shown in the following drawings.

Figures 4 through 6 show an example of a brief-type disposable diaper produced according to the present invention: 1

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represents the diaper body, formed by inserting absorbent material 13 between outer sheet (for example, a water-impermeable P.E. sheet) 11 and inner sheet (for example, water permeable nonwoven cloth) 12.

2 is the back waist part and 3 is the front waist part, and the material for both waist parts 2 and 3 may be selected independently from the material for diaper body 1, although in this embodiment, the same material is used; the double layer having P.E. sheets 21 and 31 as the outside and nonwoven cloth 22 and 32 as the inside is formed, an elastic member sheet (for example, a polyurethane sheet) 23 and 33 is inserted into part thereof, so that at least the upper edge is expandable. It should be noted that it is also possible to have a single layer elastic sheet, to form a completely expandable construction. It should be noted that as waist parts 2 and 3 are preferably of an air-permeable material, it is desirable either to take the nonwoven cloth and elastic sheet, and exclude the P.E. sheet, or, when a P.E. sheet is used, to puncture a plurality of small holes therein. It is also possible to totally or partially affix the elastic member (rubber thread, rubber tape or the like) to a sheet of suitable material, to form an elastic sheet.

Moreover, the hole parts H for the insertion of the wearer's legs are dictated by the width and shape of the diaper body 1 and the width and shape of waist parts 2 and 3, and generally, the shape is such that the holes are toward the front side.

The brief-type disposable diaper production method of the

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present invention will be described below with reference to Figures 1 through 3.

Figure a shows the diaper body 1 production process: absorbent body 13 is placed on outer sheet (back sheet) 11 supplied from outer sheet roller 11a, then inner sheet (top sheet) 12, supplied from inner sheet roller 12a, is supplied thereon, to achieve a sandwich-like insertion of absorbent body 1 between outer sheet 11 and inner sheet 12; then this is transported by the first conveyor device 4 to adhering-cutting device 15, and the circumference is firmly adhered by adhering-cutting device 15, or adhered with adhesive, then cut to the required shape. It should be noted that this process is the same as known diaper production processes, and it is possible to employ a conventional production line for disposable diapers.

It should be noted that the adhering-cutting device 15 comprises two stages: first unit 15a and second unit 15b. In first unit 15a, only adhesion and the cutting of cut-away parts P proceeds, to continuously form diaper body 1, then diaper body band 1a is transported to the next process, and may be cut crosswise to the required dimensions by second unit 15b when in the vicinity of the waistbands 2,3-adhesion process.

Moreover, as there are no cut-away parts P when diaper body 1 is long, it is also possible to achieve the aims of the present invention by only adhering in first unit 15a, then cutting in second unit 15b.

There are various possible shapes for the cut-away parts P, and the shape can be selected according to the shape of the

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waistband 2,3 and the desired shape of hole parts H.

Figure 1(b) shows a waistband 2, 3 production line: elastic member sheet 23a, supplied by elastic member sheet roller 14, is cut along a continuous S-shaped cutting line in the central portion by cutting device 24 to form a pair of bands, back waistband 2a and front waistband 3a.

It should be noted that in the case of the multilayer constructions shown in Figure 3 (outer sheet (P.E. sheet) and elastic member sheet, inner sheet (nonwoven cloth) and elastic member sheet, or outer sheet and elastic member sheet-inner sheet), if elastic member sheet 23a is a band of the same width, and only part of sheet 21a, 22a is adhered, the elastic member sheet can be used effectively without cut-away parts, and holes of the desired shape can be found by selecting a suitable shape for waist part 2,3.

Figure 1(c) integrates the diaper body 1 process of Figure 1(a) and the waistband 2a, 3a process of Figure 1(b), to show the brief-type disposable diaper-forming process: the second conveying device 5a, 5b for waistbands 2a, 3a extends to become the third conveying device 6A and the force conveying device 6B.

Diaper body supply means 7 comprises suction conveying device 7A and rotation conveying device 7B, such that suction conveying device 7A for conveying the diaper body 1 that has been cut to the required dimensions is provided at the end of the first conveying device 4, after which diaper body 1 proceeds onto rotation conveying device 7B, then rotation conveying device 7B rotates the diaper body 1 through 90°, to supply diaper body 1

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transversely to a prescribed position on waistband 2a, 3a.

It should be noted that rotation conveying device 7B receives the diaper body 1 on the conveying surface of suction conveying device 7A then supplies it by rotating 1/4 of a rotation while suction continues, then rotating the diaper body 1 that is between third conveying device 6A and fourth conveying 6B through 90°, and diaper body supply means 7 can achieve the aim by means of a suitable conveying means as follows: the adsorption surface of the diaper body is rotated through 90° according to the rotation of a suction rotation drum provided so as to be continuous with suction conveying device 7A, then the diaper body proceeds to a suction conveyor belt, whereupon it is conveyed in a transverse direction with respect to the conveying devices, thereby allowing diaper body 1 to be supplied between waistbands 2 and 3.

Diaper body 1 is then conveyed to adhesion means 8 and adhered to waistbands 2a, 3a by a suitable adhesion means such as an adhesive or heat seal.

It is then conveyed to folding means 9, and folded double by said folding means 9 to superimpose front waistband 2a and back waistband 3a.

The sides of the superimposed waistbands 2a and 2b are adhered and cut to the required shape by adhering-cutting means 10, to yield brief-type disposable diaper A.

Advantages of the invention

The present invention yields a brief-type disposable diaper by adhering and integrating a pair of waistbands and a

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diaper body and cutting to the required dimensions and so conventional diaper production lines can be used for the diaper body, the waist parts are supplied as bands and automated mass production is possible due to a belt conveying device, so the brief-type disposable diapers can be effectively produced at extremely low cost.

4. Brief description of the drawings

Figure 1 is an explanatory diagram for the brief-type disposable diaper production method of the present invention: Figure (a) shows the diaper body production process, and Figure (b) shows the waistband-integrating process.

Figure 2 is a diagram of the diaper body, and Figure 3 shows the front waist part and back waist part.

Figure 4 shows an oblique view of a brief-type disposable diaper produced according to the present invention, Figure 5 is plane view and Figure 6 is a cross-sectional view of the diaper body.

- 1 Diaper body
- 2 Back waist part
- 3 Front waist part
- 7 Diaper body supply means
- 8 Adhesion means
- 9 Folding means
- 10 Cutting means

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Patent attorney S. Okumura

送函平3-17C053 (2)

お使いになっておつとめられし、又又此頃の上記の御
お詫びはお手にとらひます。

Q U A S I

以上は西園に於て貢税金にむとづいて、本税金を
賦課する。

第4回力士第6回は本丸町により作成されたアリーフ紙代いれておのつの一例を示し、14枚のつ本は、丸録シート（例えば、丸録本丸シートであるP. 2. シート）として内録シート12（例えば、録本丸シートである不録本）として、録代12を組み込んで用意されている。

2は背面側面取り板、3は前面側面取り板であり、
背面側面取り板2・3は、おむつ本体1とは独立して
任意の形状を形成できるが、実用的ではおむつ本
体1と同様の形状を使用し、丸側面P、ビ、シ
ート21・31、内側面不織布22・32とする二
方性板とし、その一方に両端部付シート（例えは、
ボリュレーンシート）23・33を込み込み、少
なくとも上端部においてはや細長いある構造とし
た。22、32は付属シートの基部構造とし全部列

電シート112との間に組み込んだ時、音場可変電
圧113に向け第1吸音板114により遮蔽し、同様
の吸音板116により第2吸音板118を遮蔽。または相
対で接して吸音板114に吸音する。28、公知の
おなじつの電音工具と同様であり、吸音の無い音で
は102の音場21インチを44T6ことがでる。

され、用意切削量は1.5m、同じユニット1.5mと第2ユニット1.5mとの2段階式とし、同じユニット1.5mでは用意とともに削除量分までの削除のみを行なって、粗削時にさかづき式を用いして、さかづき粗削はねじりを次工程に送り出し、精削は第2・3との粗削工程の直後にねじり、次ユニット1.5mにより粗削工程に用意された量に切削してもよい。

また、かなり本ほどの形式を長方形はどうする場合に、切削部分が年をしないので、もしユニットとしてでは用意のあそびがない。またはユニットとして今回することにより日時を組成することができる。

୧୮. ପାଇଁକାର୍ଯ୍ୟ କରିବାକୁ ପରିବାରରେ ପରିବାରରେ ପରିବାରରେ

次に、第1回が裏表題を予測して、不規則二上もブリーフが使い口で800字の説明文を提出して、

6回は、ピロツヌイの加温工程を示し、丸葉シートロール1巻は2枚組まれた丸葉シート（バックシート）1巻上に、吸収紙1巻を重ねし、その上に、内葉シートロール1.2巻とクリル巻きされる内葉シート（トップシート）1巻を内側にして、アンドリツタミに吸収紙1巻と内葉シート1巻

1・3の結果より示すと同様にこのように
より多くのものである。

第1回の6回目、真美園の飯田女体2・3の2
エクサンを出し、現在第1シートロール1・2と
真美園の女性2シート2・3ロール飯田女2・4
により中央東原介の飯田女2シート2・4で
その飯田女2シート2・4を出し、一方を真美園の
エクサンを出し、一方を真美園の飯田女2・3とす。

なが、第3回に示すことく、内質シート（P-2、シート）と内質紙糊シート、内質シート（不織布）と内質紙糊シート、または内質シートと内質紙糊シート内質シートとの多層複合とする場合に、内質紙糊シートを3回を同一市の形状は同一とし、内質紙糊シート210×220の一端にのみ糊付すると、内質紙糊シートを直角的に切替部分を立てることなく（）使用形でも、且つ開閉ケ装置・3の形状を形状に調節し、糊2の形状の開口部を開放することによって容易である。

ヨリのものは、本国のものにして、日本
のものは、日本にして、日本として、

特耐平3-17G053(3)

アリーフルがいたてたとつとてた工作を示し、ひ
口に民田ヨコモハスカ・スムの第2回迄は
ハ・シキを用意してたとつとてた工作を示し
はとつとてた。

萬と進歩するものに随分に、肯定するに際する
れた所せつ本院も重視するとのの吸引は進歩
を図り、その後方の院内が進歩的院に加わ
つ本院も引取る、院内が進歩的院で所せつ本
院も90度転向させた結果の本院は2003
年間の所せつ本院に進歩的院で所せつ本院を競
して、所せつ本院を競争する院である。

なぜ、近畿地方選舉区では近畿選舉區選舉人の選舉権上の地位は1を交付なり、電引しつつ1／4票として近畿選舉區選舉人と第4選舉區選舉人との間に地位は1を0.0度程向させて開設するものであるが、近畿地方選舉区人に近畿して電引既にドラムを打けてドラムの周囲に押って地位は0.0度の電引票を選舉させて0.0度向させたのち電引ベルトに引導手が引導ベルトと選舉権と選舉票を押して0.0度

ので実現されることで、ベルト駆動方式による大
量の電気遮断は可能となることがで、しかもこの
コストをアブリーフ時間内に取扱うことを可能とす
る事は大きな利点である。

1. 田舎の風俗と風情

第1回は本発明によるブリーフケースの開閉装置で、箱の
上のスロットルを手で操作して、箱にははりつた
の装置工作、ひねり開閉装置との一括工作をそ
れぞれ行なうのである。

第2回は8ヶ所の放題。第3回は8ヶ所の放題
第4回は8ヶ所の放題。

次に図は本発明により製造されたブリーフが使
い捨て可能な二つの部品図、第1図は平面図、第2図
は斜視図及び第3図は断面図である。

1を測定する場合は12・3回に測定で9.66%である。そこで2次測定は9.66%は測定の誤差を9.6%により2回を測定することが88%。

次に用を学校へは廻した後、ヒートシール、
両手袋の運送の便を手段により、左はおひつ
を何どう団り就寝状況をうなざして一
R T S.

そののち、所定みす段落へ送達し、所定段落
段落により二段目以降段落へ所定段落
2段目以降段落へ所定段落

電気自動車の販売額は年々伸びて居るが、これは主として乗用車の販売が伸びて居る。乗用車の販売額は、1955年には1954年より約10%増加した。乗用車の販売額は、1955年には1954年より約10%増加した。

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本発明は、一片の被覆り板質本体と、なりつけなどと、直角一体化し、被覆り板に切替することにより、アリーフが使い捨てとなりつを完成するものであるから、なりつけ本体は被覆のなりつけインを用することがて、また被覆り板は被覆

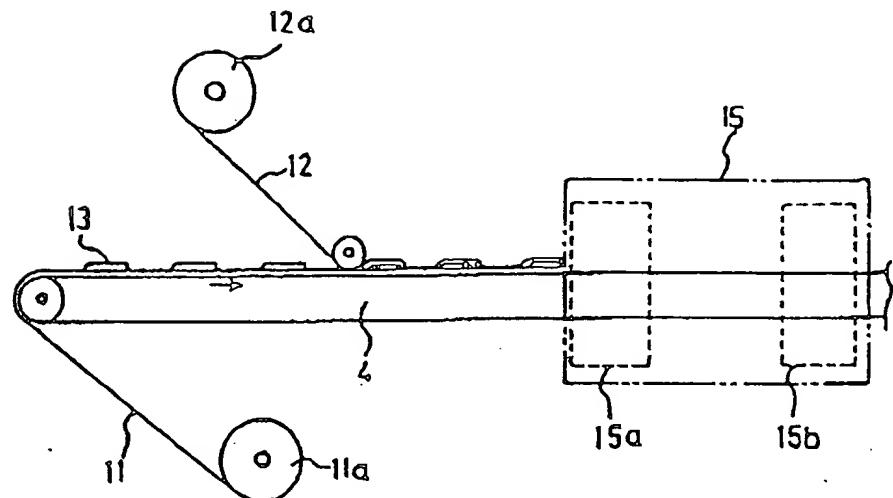
10--安徽平税

出資人 楊氏合夥 金元
代理人 陈慶士 金元 文昌

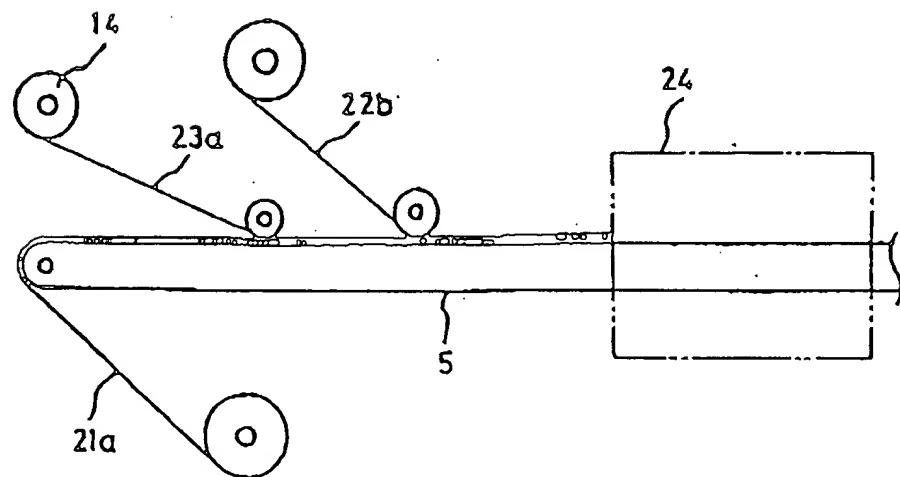
1. --- おおつ木は
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特開平3-176053 (4)

第1図 (a)

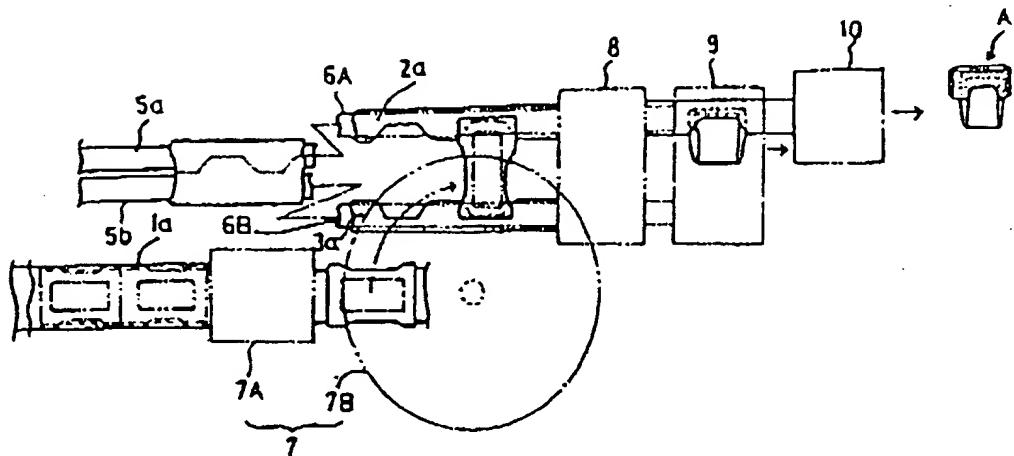


第1図 (b)

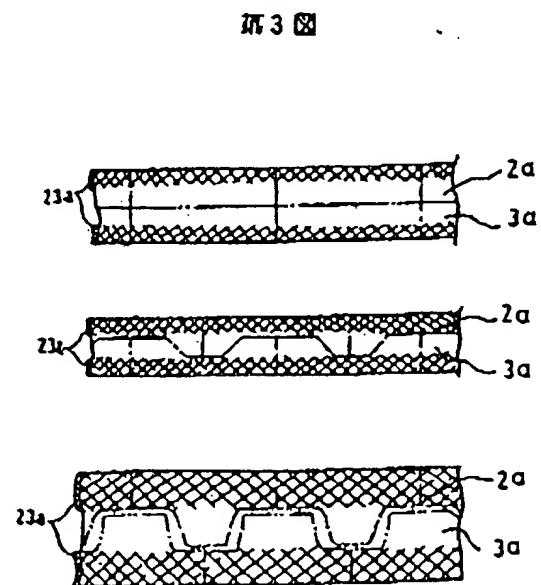
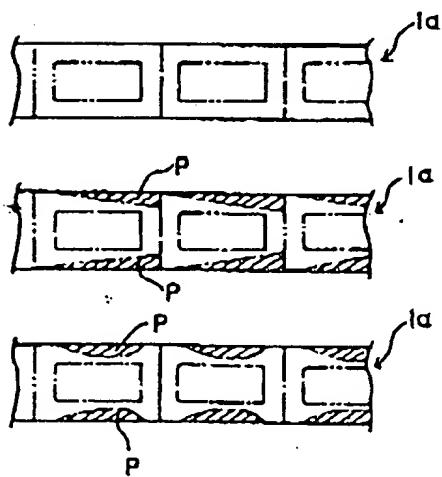


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第1図 (C)

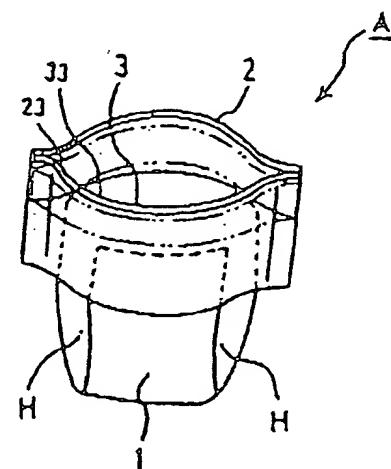


第2図

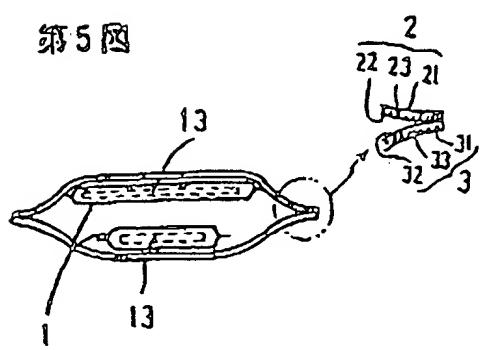


特開平3-176053(6)

第4図



第5図



第6図

